

Abstract Submitted to the
International Conference on Strongly Correlated Electron Systems
University of Michigan, Ann Arbor
August 6-10, 2001

Thermoelectric power of Ce(Pd_{1-x}Ni_x)Al single crystals

Dexuan Huo, Tomohiko Kuwai, Toshio Mizushima, Yosikazu Isikawa, Junji Sakurai
Department of Physics, Toyama University, Toyama 930-8555, Japan

Both CePdAl and CeNiAl crystallize in the hexagonal ZrNiAl-type structure. The former is an antiferromagnetic Kondo compound ($T_N = 2.7$ K). The latter is a nonmagnetic compound. The disappearance of magnetic moments in Ce(Pd_{1-x}Ni_x)Al was studied with polycrystalline samples by the present authors. T_N was found to disappear at the critical concentration $x_c \sim 0.1$. Near to x_c , a heavily enhanced electronic specific-heat coefficient was observed. We have grown single crystals of Ce(Pd_{1-x}Ni_x)Al ($x = 0, 0.1, 0.2, 0.4, 1$) by the Czochralski method. The anomalous thermoelectric power (S) behavior of these single crystals is reported in this paper. S shows strong anisotropic temperature dependences along a - and c - axis. With increasing x , S changes from a double peak structure to one positive peak structure. For $x = 0.4$, S shows the largest S/T slope at low temperatures.